

WHAT WE CLAIM IS:

1. A finder for an image pickup device, which makes use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

5 2. A display for an image pickup device, which makes use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

10 3. Variable-focus glasses, which make use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

4. An optical pickup, which makes use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

15 5. An optical measuring device, which make use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

6. A decentration measuring device, which makes use of a variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

7. A variable hologram element, which comprises a photonic crystal and a liquid crystal.

8. An endoscope, wherein an image is formed by a digital hologram.

25 9. A variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal, wherein a substrate therefor has a lens or mirror action.

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10. A variable hologram element using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal, which meets at least one of conditions (1), (4), (8), (10) and (11).

5 11. A variable hologram device, wherein a plurality of variable hologram elements, each using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal, are laminated together with a transparent electrode interposed therebetween.

10 12. A finder for an image pickup device, which makes use of a variable hologram element.

13. The finder for an image pickup device according to claim 12, which further includes a light source having a short half bandwidth.

15 14. The finder for an image pickup device according to claim 5, which further satisfies at least one of conditions (5) and (6).

15. A finder for a digital camera, which makes use of a variable hologram element.

20 16. A single-lens reflex, Galilean, Albada or Keplerian type finder, which makes use of a variable hologram element.

17. A wearable information device making use of a variable hologram element, which is used with a light source having a short half bandwidth.

25 18. A wearable information device making use of a variable hologram element, wherein said variable hologram element is used for an adapter or case.

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19. A wearable information device making use of a variable hologram element, wherein said wearable information device may be used in the form of a head mount display and has functions of glasses and a display.

5 20. A display for an image pickup device, which makes use of a variable hologram element.

21. The display for an image pickup device according to claim 20, which further includes a light source having a short half bandwidth.

10 22. The display for an image pickup device according to claim 20, wherein said variable hologram element is used for an adapter or case.

23. Variable-focus glasses, which make use of a variable hologram element.

15 24. The variable-focus glasses according to claim 23, which further includes a light source having a short half bandwidth.

25 25. The variable-focus glasses according to claim 23, which are used with a light source having a short half bandwidth.

26. An optical pickup, which makes use of a variable hologram element.

27. An optical pickup for disks with varying thicknesses, which makes use of a variable hologram element.

25 28. The optical pickup according to claim 26 or 27, which is used with a light source having a short half bandwidth.

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29. An optical measuring device, wherein a variable hologram element is used for optical path switching.

30. An optical measuring device, which makes use of a variable hologram element.

5 31. The optical measuring device according to claim 29 or 30, which is used with a light source having a short half bandwidth.

32. A decentration measuring device, wherein a variable hologram element is used for optical path switching.

10 33. A decentration measuring device, which makes use of a variable hologram element.

34 A variable hologram element, which comprises a liquid crystal impregnated into interstitial voids in a photonic crystal.

15 35. A variable hologram element, which comprises a photonic crystal and a liquid crystal.

36. An endoscope, wherein an image is formed by a digital hologram.

20 37. The endoscope according to claim 36, which further satisfies condition (12).

38. The endoscope according to claim 36, wherein an image is formed by a digital hologram using infrared light.

39. The endoscope according to claim 38, wherein visible light is observable.

25 40. The endoscope according to claim 36, which further includes a trichromatic light source.

41. The endoscope according to claim 38, which further satisfies condition (13).

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42. The endoscope according to any one of claims 36 to 41, which further includes a half-silvered mirror prism.

43. A head mount display, which makes use of a variable hologram element and has functions of glasses and a display.

5 44. An optical measuring device, which makes use of a variable hologram element having an optical path switching function.

45. A device, wherein the hologram element according to any one of claims 12, 15, 16, 20, 23, 26, 27, 29, 30, 32 and
10 33 is constructed, using a polymer dispersed liquid crystal or a polymer stabilized liquid crystal.

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